

CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended): A system that ranks search results, comprising a processor executing the following components:

a ranking component that determines relevance of respective search results generated from a search associated with one or more of a Usenet, a discussion thread, a blog, an archived community discussion, or a chat room via ~~one or more~~ multiple feature-based relevance functions,

wherein features of the relevance functions are based at least on one or more global thread properties comprising at least a thread depth defined over a thread comprising one or more messages that include at least a message core and a message body, one or more posting-specific thread properties and attributes of a person posting the messages, and

wherein-further the attributes comprise at least a number of posting per time duration, a number of newsgroups posted to and a number of postings that have no responses; and

a function generator component that generates the relevance functions such that ordered search results are ordered based on their respective relevancies;

wherein the search is selectively scoped based at least on a structure of the thread comprising the one or more messages,

wherein further at least one of the features is based on inferred labels on edges between an existing message in the thread and one or more of a parent or child of the message, and

wherein the labels determine a nature of a respective message in the thread and are automatically inferred from content of the one or more messages within the thread; and

a thresholding component that defines a threshold for an acceptable relevance level for at least one of the multiple relevance functions to mitigate providing non-relevant search results to a user, wherein the threshold is dynamically adjustable to adapt to the user's response to returned results by raising the threshold when the user rejects at least part of the returned results with a relevance above the threshold.

2. (Previously Presented): The system of claim 1,

wherein the one or more global thread properties include at least one of: a number of messages in a thread, a thread maximal branching factor, a thread linguistic property; and

wherein the one or more posting-specific thread properties comprise at least one of a posting depth, a number of descendants of a posting, a number of children in a posting, and

wherein further the relevance functions utilize one or more newsgroups based on a probability that a posting is relevant given that the posting is from a particular

newsgroup, or a probability a posting from a particular newsgroup is relevant given a query.

3. (Previously Presented): The system of claim 1, wherein the relevance functions are generated based on one or more of scoped lexical information, a digital artifact attribute, or a source repository attribute.
4. (Canceled)
5. (Previously Presented): The system of claim 1, wherein the search results are further associated with searches over data associated with one or more of, a mailing list, a wiki, a web page, a database or a list.
6. (Previously Presented): The system of claim 1, wherein the function generator generates the relevance functions based on at least one of a training set, a feature set, a probability, an inference, a classifier, a heuristic, or user specified criteria.
7. (Previously Presented): The system of claim 1, wherein the relevance functions are refined based on a user's response to the ranked search results.
8. (Previously Presented): The system of claim 1, wherein the relevance functions are probabilities that respective digital artifacts are relevant to a search.

9. (Previously Presented): The system of claim 8, wherein at least one relevance function is defined as $\text{Relevance}(V(\text{posting}, \text{query}))$, which is a relevance weight of a posting given a query, and wherein further function $V(\text{posting}, \text{query})$ returns a set of features and feature values for a particular posting and query.

10. (Previously Presented): The system of claim 1, wherein the relevance functions associate relevance weights with respective search results and the ranking of the search results is based on the relevance weights.

11. (Previously Presented): The system of claim 1, wherein the relevance functions are generated via machine learning.

12. (Previously Presented): The system of claim 11, wherein the machine learning includes one or more of a linear regression, a non-linear regression, or a support vector machine.

13. (Previously Presented): The system of claim 1, wherein the one or more feature-based relevance functions utilize features that are obtained by extracting information from digital artifacts.

14. (Currently Amended): The system of claim 1, wherein the threshold limits the returned results based on system level constraints further comprising a thresholding

~~component that defines one or more acceptable relevance levels in order to mitigate providing non-relevant search results to a user.~~

15. (Currently Amended): The system of claim 14, wherein the threshold is tuned acceptable relevance levels are configured for at least one of an application and the user.

16. (Currently Amended): The system of claim 14, wherein the threshold limits the returned results based on at least one of available memory or processing capacity acceptable relevance levels dynamically adjust based on the user's response to search results.

17. - 33. (Canceled)

34. (Currently Amended): The system of claim 1 wherein, the ~~one or more features feature-based relevance functions determine relevance of a posting by utilizing an occurrence of one or more of a word, a word class or a specified phrase in a thread position relative to the posting.~~

35. - 36. (Canceled)

37. (Currently Amended): A system that ranks search results, comprising the following means stored in a computer memory:

means for determining relevance of respective search results selected from one or more of a Usenet, a discussion thread, a blog, an archived community discussion, or a chat room via one or more feature-based relevance functions, wherein the features are based at least on one or more of global thread properties comprising at least a thread depth, one or more posting-specific thread properties and attributes of a person generating the postings, and wherein the attributes comprise at least a number of posting per time duration, a number of newsgroups posted to and a number of postings that have no responses; and

means for generating the one or more relevance functions that facilitate ordering the search results based on their respective relevancies, wherein the search has variable scope based at least on a structure of ~~the-a~~ thread comprising ~~the~~ one or more messages comprising at least a message core with text of a single message within the thread and a message body including text of a plurality of messages structurally related to the single message within the thread, at least one of the features is based on labels on edges between a message in the thread and one or more of a parent or child of the message,

wherein the labels are automatically inferred from content of the one or more messages within the thread; and

means for defining a threshold for an acceptable relevance level for at least one of the one or more relevance functions to mitigate providing non-relevant search results to a user, wherein the threshold is dynamically adjustable to adapt to the user's

response to returned results by raising the threshold when the user rejects a portion of the returned results with a relevance above the threshold.

38. (Previously Presented): The system of claim 37, further comprising means for automatically training the relevance functions from labeled data.

39. (Previously Presented): The system of claim 3, wherein the scoped lexical information indicates extent of a search, and wherein further the scope is limited or includes all repositories and associated information.

40. (Previously Presented): The system of claim 39, wherein the search is scoped over one or more of at least a message core, a complete message body, all messages in the thread, or all messages in a sub tree with a particular posting as a root.

41. (Currently Amended): The system of claim 40, wherein the one or more features feature-based relevance functions utilize one or more of text-based relevance scores for respective scoping.

42. (Currently Amended) The system of claim 41, 37,

wherein there are multiple relevance functions;

wherein the multiple relevance functions are employed serially such that a first relevance function is utilized and then a second relevance function is utilized for determining the relevancies~~the message core comprises text of a single message and the~~

~~message body comprises text of a plurality of messages comprising one or more of prior messages or descendants.~~

43. (New): The system according to claim 37, wherein the threshold limits the returned results based on system level constraints.

44. (New): The system according to claim 37, wherein the threshold is tuned for an application.

45. (New): The system according to claim 37, wherein the threshold limits the returned results based on at least one of available memory or processing capacity.

46. (New): A computer-implemented method comprising:
determining, by a processor of the computer, relevance of respective search results from posted threads comprising a plurality of messages, wherein the relevance is determined using one or more feature-based relevance functions,
wherein the features are based at least on one or more of global thread properties comprising at least a thread depth, one or more posting-specific thread properties and attributes of a person generating the postings, wherein the attributes comprise a number of posting made by the person over a specified period of time;
generating the one or more relevance functions that facilitate ordering the search results based on their respective relevancies,

wherein the search has variable scope based at least on a structure of the threads comprising the plurality of messages comprising at least a message core with text of a single message within a particular thread and a message body including text of a plurality of messages structurally related to the single message within the particular thread; and

defining a threshold for an acceptable relevance level for at least one of the one or more relevance functions to mitigate providing non-relevant search results to a user, wherein the threshold is dynamically adjustable to adapt to the user's response to returned results by raising the threshold when the user rejects a portion of the returned results with a relevance above the threshold.

47. (New): The method according to claim 46, wherein there are multiple relevance functions, and further comprising employing the multiple relevance functions serially such that a first relevance function is utilized and then a second relevance function is utilized for determining the relevancies.

48. (New): The method according to claim 46, wherein the threshold limits the returned results based on system level constraints.

49. (New): The method according to claim 46, wherein the threshold is tuned for an application.

50. (New): The method according to claim 46, wherein the threshold limits the returned results based on at least one of available memory or processing capacity.

51. (New): The method according to claim 46,

wherein at least one of the features is based on inferred labels on edges between an existing message in the thread and one or more of a parent or child of the message, and

wherein the labels determine a nature of a respective message in the thread and are automatically inferred from content of the one or more messages within the thread.